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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/016,514	12/17/2001	Mark R. Easter	110938-00132	8304

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EXAMINER

MAYO III, WILLIAM H

ART UNIT PAPER NUMBER

2831

DATE MAILED: 11/13/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

11

Office Action Summary

Application No.

10/016,514

Applicant(s)

EASTER, MARK R.

Examiner

William H. Mayo III

Art Unit

2831

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 September 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-14 and 17-19 is/are rejected.
- 7) ☒ Claim(s) 15 and 16 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-10, 12-14, and 17-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Reid et al (Pat Num 6,086,792, herein referred to as Reid). Reid discloses a semi-composition for useful in the preparation of power cable semi-conducting shields (Col 1, lines 4-5). Specifically, with respect to claim 1, Reid discloses a semi conducting material comprising about 55 to about 75 percent of a base polymer (i.e. 5-80 percent, Col 4, lines 20-27), about 25 to 45 percent by weight of carbon black (25-45 percent) having a particle size from about at least 29nm (Col 2, line 44), an Iodine number of from about 30g/kg to about 300g/kg (i.e. 300 mg/g, Col 2, lines 53-54), and a DBP number from about 90 cm³/100g-170 cm³/100g (i.e. 80-300, Col 2, lines 52-54). With respect to claim 2, Reid discloses that the particle size is at least 29nm (Col 2, line 44). With respect to 3, Reid discloses that the Iodine number of from about 125g/kg to about 150g/kg (i.e. 300 mg/g, Col 2, lines 53-54). With respect to claim 4, Reid discloses that the tint strength is at least about 95% (i.e. 100 %, Col 2, line 45). With respect to claim 5, Reid discloses that the particle size is at least 29nm (Col 2, line 44) and the Iodine number of from about 125g/kg to about 150g/kg (i.e. 300

mg/g, Col 2, lines 53-54). With respect to claim 6, Reid discloses that the about composition has about 30 to 40 percent by weight of carbon black (25-45 percent). With respect to claim 7, Reid discloses a semi conducting material comprising about 60 to about 70 percent of a base polymer (i.e. 5-80 percent, Col 4, lines 20-27). With respect to claim 8, Reid discloses that the base polymer may be made of copolymers of ethylene and unsaturated esters (Col 4, lines 20-26), copolymers of ethylene and one or more α -olefins having 3 to 6 atoms (i.e. 3 to 20 atoms, Col 5, lines 1-5), and EPR or EDPM rubbers (Col 4, lines 65-68). With respect to claim 9, Reid discloses that the base polymer may be ethylene vinyl acetate (Col 4, lines 42-44). With respect to claim 10, Reid discloses that the ethylene vinyl acetate has vinyl acetate content from about 18-20 percent (i.e. 10 to 40 percent, Col 4, lines 27-28). With respect to claim 12, Reid discloses a semi conducting material comprising about 55 to about 75 percent of a base polymer (i.e. 5-80 percent, Col 4, lines 20-27), about 25 to 45 percent by weight of carbon black (25-45 percent) having a particle size from about at least 29nm (Col 3, lines 29-35), an Iodine number of from about 30g/kg to about 300g/kg (i.e. 300 mg/g, Col 2, lines 53-54), and a DBP number from about 90 cm³/100g-170 cm³/100g (i.e. 80-300, Col 2, lines 52-54). With respect to 13, Reid discloses that the Iodine number of from about 125g/kg to about 150g/kg (i.e. 300 mg/g, Col 2, lines 53-54). With respect to claim 14, Reid discloses that the tint strength is at least about 95% (i.e. 100 %, Col 2, line 45). With respect to claim 17, Reid discloses a method of making a semi conducting composition comprising blending about 55 to about 75 percent of a base polymer (i.e. 5-80 percent, Col 4, lines 20-27) with about 25 to 45 percent by weight of

carbon black (25-45 percent) having a particle size from about at least 29nm (Col 3, lines 29-35), an Iodine number of from about 30g/kg to about 300g/kg (i.e. 300 mg/g, Col 2, lines 53-54), and a DBP number from about 90 cm³/100g-170 cm³/100g (i.e. 80-300, Col 2, lines 52-54). With respect to claim 18, Reid discloses a method of making a semi conducting composition comprising carbon black (25-45 percent) having a particle size from about at least 29nm (Col 3, lines 29-35). With respect to claim 19, Reid discloses a method of making wherein the tint strength is at least about 95% (i.e. 100 %, Col 2, line 45). With respect to claim 20, Reid discloses a method of making a semi conducting composition wherein the Iodine number of from about 30g/kg to about 300g/kg (i.e. 300 mg/g, Col 2, lines 53-54).

However, Reid doesn't necessarily disclose the semi conductive material being used in a cable having a conductive core and a semi conducting layer surrounding the conductive core (claim 1), wherein particle size of the carbon black is between 15-22nm, nor the iodine number being from 115-200mg/g (claims 1, 12, and 17), nor the particle size being 18-21nm (claim 2), nor the iodine number being about 120-150mg/g (claims 3 & 13), nor the particle size is about 20nm and the iodine number being 125-150 mg/g (claim 5).

Reid teaches that semiconductor materials are commonly utilized in power cables comprising a cable core that is surrounded by first layer of semi conducting shield, an insulating layer and a second layer of semi conducting shield (Col 1, lines 8-14). With respect to claims 1-2, 12, & 17-18, Reid also teaches that carbon black

having particles sizes of less than 22nm are commonly utilized as semi conducting materials (Col 3, lines 29-40).

With respect to claims 1-2, 5, 12, and 17-18, it would have been obvious to one having ordinary skill in the art of cables at the time the invention was made to modify the carbon black material of Reid to comprise the semi conducting material being utilized in a cable core having a carbon black particle size of less than 22nm since, Reid teaches such a configuration is well known in the art of cables and exhibits a high degree of porosity, high structure, and smaller particle size, all of which contribute to the lower resistivity of the grade (Col 1 & 3, lines 8-14 & 29-40).

With respect to claims 3 & 13, it would have been an obvious matter of design choice to modify the carbon black of Reid to comprise an iodine number being about 120-150mg/g, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

3. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Reid (Pat Num 6,086,792) in view of Hendewerk et al (Pat Num 6,270,856, herein referred to as Hendewerk). Reid discloses a semi-composition for useful in the preparation of power cable semi-conducting shields (Col 1, lines 4-5) as disclosed above with respect to claim 1 above.

However, Reid doesn't necessarily disclose the base polymer being ethylene/l-butene having a density of about 0.85-0.95 g/cm³ (claim 11).

Hendewerk teaches a polymeric material for usage with power cables (Col 1, lines 17-20). Specifically, with respect to claim 11, Hendewerk teaches cable (Fig 3) comprising a polymeric material that may be semi conducting material (Col 9, lines 54-67) having a base polymer of ethylene/l-butene (Col 6, lines 25-36) and having a density of about 0.85-0.95 g/cm³ (Cols 6-7, lines 66-67 & 1-3) that exhibits improved resistance to treeing and other improved physical and mechanical properties (Col 3, lines 35-40).

With respect to claim 11, it would have been obvious to one having ordinary skill in the art of cables at the time the invention was made to modify the base polymer of Reid to comprise the material configuration as taught by Hendewerk because Hendewerk teaches that such a configuration provides a cable that exhibits improved resistance to treeing and other improved physical and mechanical properties (Col 3, lines 35-40).

Allowable Subject Matter

4. Claims 15-16 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.
5. The following is a statement of reasons for the indication of allowable subject matter: This invention deals with a semi conductive shield having an accelerated cable life test (ACLT) Weibull Beta value of 1.5 or more (claim 15), specifically 3.0 or more (claim 16). The above stated claim limitations, in combination with other claimed limitations, is not taught or suggested by the prior art of record.

Response to Arguments

6. Applicant's arguments filed September 12, 2003 have been fully considered but they are not persuasive. Specifically, the applicant argues the following:

- A) The examiner offers no motivation to modify the carbon black of Reid and therefore has not established a proper prima facie case of obviousness.
- B) Reid actually teaches away from using carbon black having particle size less than about 29nm.
- C) Modification of the Reid reference would render the reference unsatisfactory for its intended purpose because the composition would not meet the smoothness requirement of Reid.

With respect to arguments A, B, & C, the examiner respectfully traverses. The examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, Reid clearly teaches that carbon black having particles sizes of less than 22nm are commonly utilized as semi conducting materials in cable, because this specific particle size exhibits a high degree of porosity, high structure, and smaller particle size, all of which contribute to the lower resistivity of the grade (Col 1 & 3, lines 8-14 & 29-40). While Reid may not be

concerned with lower resistivity, one cannot ignore the teaching of prior art discussed in the reference. The courts have been consistent that a reference must be considered for all that it discloses. Specifically, the courts have held that

"PATENTS ARE RELEVANT AS PRIOR ART FOR ALL THEY CONTAIN"

"The use of patents as references is not limited to what the patentees describe as their own inventions or to the problems with which they are concerned. They are part of the literature of the art, relevant for all they contain." *In re Heck*, 699 F.2d 1331, 1332-33, 216 USPQ 1038, 1039 (Fed. Cir. 1983) (quoting *In re Lemelson*, 397 F.2d 1006, 1009, 158 USPQ 275, 277 (CCPA 1968)).

Given the above stated court case and utilizing it as a precedent case, one of ordinary skill in the art of cables, has to consider the patent for all it teaches and would have suggested to one of ordinary skill in the art. In this case, Reid specifically, discloses that carbon black having particles sizes of less than 22nm are commonly utilized and commercially available as semi conducting materials in cable. Clearly, while Reid is concerned with smoothness, it also teaches that resistivity is a major concern in the development of semiconducting materials of a cable (see Column 2, lines 8-15). Based on the teaching of Reid, a person of ordinary skill in the art concerned with resistivity would be motivated to rely on the teachings of the prior art disclosure of Reid which teaches that carbon black having particles sizes of less than 22nm are commonly utilized as semi conducting materials in cable, because this specific particle size exhibits a high degree of porosity, high structure, and smaller particle size, all of which contribute to the lower resistivity of the grade (Col 1 & 3, lines 8-14 & 29-40). Secondly, the courts have also held the modification of a material with a commercially

available material to be within general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. In re Leshin, 125 USPQ 416.

The applicant makes the argument that Reid teaches away from utilizing carbon black having a particle size of less than 22nm and such a modification would render the reference unsatisfactory for its intended purpose because the composition would not meet the smoothness requirement of Reid. However, the courts have also been consistent that a prior art reference that teaches away from utilizing a known and commercially available material because it may be inferior for the intended use of the prior art reference purpose, doesn't necessarily constitute patentable subject matter, wherein the prior art teaching disclosed in the prior art reference would have been obvious to one of ordinary skill in the art. Specifically, the courts have held that

"A reference may be relied upon for all that it would have reasonably suggested to one having ordinary skill in the art, including nonpreferred embodiments. Merck & Co. v. Biocraft Laboratories, 874 F.2d 804, 10 USPQ2d 1843 (Fed. Cir.), cert. denied, 493 U.S. 975 (1989). See also Celeritas Technologies Ltd. v. Rockwell International Corp., 150 F.3d 1354, 1361, 47 USPQ2d 1516, 1522-23 (Fed. Cir. 1998) (**The court held that the prior art anticipated the claims even though it taught away from the claimed invention. "The fact that a modem with a single carrier data signal is shown to be less than optimal does not vitiate the fact that it is disclosed."**).

NONPREFERRED EMBODIMENTS CONSTITUTE PRIOR ART

Disclosed examples and preferred embodiments do not constitute a teaching away from a broader disclosure or nonpreferred embodiments.

In re Susi, 440 F.2d 442, 169 USPQ 423 (CCPA 1971).

“A known or obvious composition does not become patentable simply because it has been described as somewhat inferior to some other product for the same use.” In re Gurley, 27 F.3d 551, 554, 31 USPQ2d 1130, 1132 (Fed. Cir. 1994)

(The invention was directed to an epoxy impregnated fiber-reinforced printed circuit material. The applied prior art reference taught a printed circuit material similar to that of the claims but impregnated with polyester-imide resin instead of epoxy. The reference, however, disclosed that epoxy was known for this use, but that epoxy impregnated circuit boards have “relatively acceptable dimensional stability” and “some degree of flexibility,” but are inferior to circuit boards impregnated with polyester-imide resins. The court upheld the rejection concluding that applicant’s argument that the reference teaches away from using epoxy was insufficient to overcome the rejection since “Gurley asserted no discovery beyond what was known in the art.” 27 F.3d at 554, 31 USPQ2d at 1132.).

In light of the above comments, the examiner respectfully submits that the rejection under 35 USC 103(a) is proper and just as supported by the above stated court cases.

Conclusion

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Communication

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to William H. Mayo III whose telephone number is (703) 306-9061. The examiner can normally be reached on M-F 8:30am-6:00 pm (alternate Fridays off).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dean Reichard can be reached on (703) 308-3682. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 305-3432 for regular communications and (703) 305-3431 for After Final communications.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

A handwritten signature in black ink, appearing to be "WHM III", written over a circular stamp or seal.

WHM III
November 10, 2003